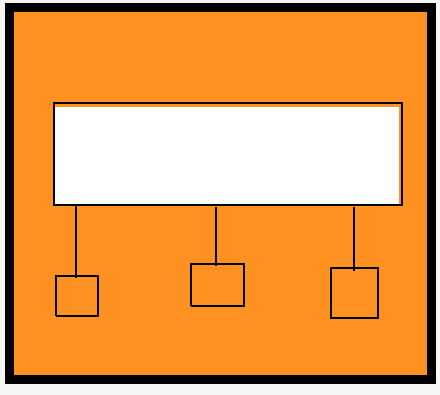
SPECTRUM®

From a p r i s m a Management Technologies

SPECTRUM Enterprise Manager

Device Management

Xylogics Terminal Server



Supports Management Module SM-XYL1001

Notice

Aprisma Management Technologies, Inc. (Aprisma), reserves the right to make changes in specifications and other information contained in this document without prior notice. The reader should in all cases consult Aprisma to determine whether any such changes have been made.

The hardware, firmware, or software described in this manual is subject to change without notice.

IN NO EVENT SHALL APRISMA, ITS EMPLOYEES, OFFICERS, DIRECTORS, AGENTS, OR AFFILIATES BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS) ARISING OUT OF OR RELATED TO THIS MANUAL OR THE INFORMATION CONTAINED IN IT, EVEN IF APRISMA HAS BEEN ADVISED OF, KNOWN, OR SHOULD HAVE KNOWN, THE POSSIBILITY OF SUCH DAMAGES.

Copyright © June, 2000 by Aprisma Management Technologies. All rights reserved.

Printed in the United States of America.

Order Number: 9031499 01

Aprisma Management Technologies, Inc.
121 Technology Drive
Durham NH 03824

SPECTRUM, the **SPECTRUM IMT/VNM** logo, **DCM**, **IMT**, and **VNM** are registered trademarks, and **SpectroGRAPH**, **SpectroSERVER**, **Inductive Modeling Technology**, **Device Communications Manager**, and **Virtual Network Machine** are trademarks of Aprisma or its affiliates.

Ethernet is a trademark of Xerox Corporation.

Nortel is a trademark of Nortel Network Corporation

Xylogics is a trademark of Nortel Network Corportation

Virus Disclaimer

Aprisma makes no representations or warranties to the effect that the Licensed Software is virus-free.

Aprisma has tested its software with current virus checking technologies. However, because no anti-virus system is 100% reliable, we strongly caution you to write protect and then verify that the Licensed Software, prior to installing it, is virus-free with an anti-virus system in which you have confidence.

Restricted Rights Notice

(Applicable to licenses to the United States Government only.)

1. Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013.

   Aprisma Management Technologies, Inc., 121 Technology Drive NH 03824

2. (a) This computer software is submitted with restricted rights. It may not be used, reproduced, or disclosed by the Government except as provided in paragraph (b) of this Notice or as otherwise expressly stated in the contract.

   (b) This computer software may be:

   (1) Used or copied for use in or with the computer or computers for which it was acquired, including use at any Government installation to which such computer or computers may be transferred;

   (2) Used or copied for use in a backup computer if any computer for which it was acquired is inoperative;

   (3) Reproduced for archival or backup purposes;

   (4) Modified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software incorporating restricted computer software are made subject to the same restricted rights;

   (5) Disclosed to and reproduced for use by support service contractors in accordance with subparagraphs (b) (1) through (4) of this clause, provided the Government makes such disclosure or reproduction subject to these restricted rights; and

   (6) Used or copied for use in or transferred to a replacement computer.

   (c) Notwithstanding the foregoing, if this computer software is published copyrighted computer software, it is licensed to the Government, without disclosure prohibitions, with the minimum rights set forth in paragraph (b) of this clause.

   (d) Any other rights or limitations regarding the use, duplication, or disclosure of this computer software are to be expressly stated in, or incorporated in, the contract.

   (e) This Notice shall be marked on any reproduction of this computer software, in whole or in part.

Contents

INTRODUCTION **6**

Purpose and Scope 6
Required Reading 6
Supported Devices 7
The SPECTRUM Model 8

TASKS **10**

Application Information (examine) 10
Device (configure) 10
Device Performance (monitor) 10
Interface Mask and Address (examine) 10
Model Information (examine) 10
Model Redundancy (configure) 10
Port Configuration (examine/modify) 10
Port (examine/enable/disable) 10

DEVICE VIEWS **11**

Logical Device View 11
Logical Interface Icons 12
Interface Icon Subviews Menu Options 13
Ethernet Logical Interface Icon 13
Interface Number 14
Ethernet Interface Configuration View 14
Interface Receive Statistics 15
Interface Send Statistics 16
Serial Port Logical Interface Icon 16
Interface Number 17
Port Interface Status 17
Serial Port Configuration View 17
Serial Port Configuration View for the CSMIM and Annex2 18
Serial Port Configuration View for the CSMIMII, MicroCS, MicroAnnex, and 5390/5390-2 20
Serial Port Flow Control and Signal Parameters 23
Serial Port Timers and Counters View 25
Port Security Parameters View 26
CLI Line Editing Parameters View 27
Serial Networking Parameters 28
General Parameters 28
Slip Parameters 29
PPP Parameters 30
LAT Port Parameters View 31
PPP Port Parameters View 32
Serial Port Performance View 32
Port Interface Status View 33
Interface Status View 33
Secondary Address Panel 34

DEVICE TOPOLOGY VIEWS **35**

Interface Device Topology View 35

APPLICATION VIEWS **36**

Application Icons 37
Supported Applications 38
Character Stream Application View (RFC1316App) 38
Character Port Table 38
Character Port Detail View 39
Parallel Port Application 42
Parallel Port Table 42
Parallel Port Detail View 42
Xylogics Modem Application View 43
Modem Calls Table 43
Xyl Parallel Application Views 44
Parallel Port View 44
Xylogics Parallel Port Configuration View 44

PERFORMANCE VIEWS 46

Device Performance View 46
Performance View 47

CONFIGURATION VIEWS 48

Device Configuration View 48
CSMIM and Annex II Configuration View 49
Boot and Network Administration View 50
NameServer Parameters View 52
LAT Parameters View 54
VCLI Parameters View 55
Serial Port Table 55
MicroAnnex, MicroCS, and CSMIM II 56
Boot and Network Administration View 58
Trap Host View 59

Contents

LAT Parameters View 59
Security Parameters View 59
NameServer Parameters View 60
Diagnostic View 60
Diagnostic View Information 61
Diagnostic Detail View 61
Diagnostic Detail View Information 61

MODEL INFORMATION VIEWS 63

INDEX 64

Introduction

This section introduces the SPECTRUM Device Management documentation for Xylogics Terminal Server devices.

This introduction to the Device Management documentation for Xylogics Terminal Server devices contains the following information:

- *Purpose and Scope*
- *Required Reading*
- *Supported Devices* (Page 7)
- *The SPECTRUM Model* (Page 8)

Purpose and Scope

Use this documentation as a guide for managing Xylogics Terminal Server devices with the SPECTRUM management module SM-XYL1001. The documentation describes the icons, menus, and views that enable you to remotely monitor, configure, and troubleshoot Motorola Vanguard devices through software models in your SPECTRUM database.

Only information specific to the supported management module is included under this documentation topic. For general information about device management using SPECTRUM and for explanations of basic SPECTRUM functionality and navigation techniques, refer to the topics listed under *Required Reading*.

Required Reading

To use this documentation effectively, you must be familiar with the information covered by the other SPECTRUM online documentation topics listed below.

- ***Getting Started with SPECTRUM for Operators***
- ***Getting Started with SPECTRUM for Administrators***
- ***How To Manage Your Network with SPECTRUM***
- ***SPECTRUM Views***
- ***SPECTRUM Menus***
- ***SPECTRUM Icons***
- ***Management Module Software Release Notice***

Supported Devices

The SPECTRUM management module SM-XYL-1001 currently allows you to model three different types of Xylogics Terminal Server devices as described below.

Synoptics 5390 (Xyl_5390). This model type is for Xylogics Terminal Servers with a Software version less than 9.0.

Synoptics 5390 (Xyl_5390II). This model type is for Xylogics Terminal Servers with a Software version great than 9.0.

CSMIM, CSMIMII, AnnexII (Xyl_CSMIM). This model type is used with Xylogics Terminal Servers with a Software version less than 9.0.

CSMIM, CSMIMII, AnnexIII, MODMIM, MODEXT-4, MODEXT-8 (Xyl_CSMIMII). This model type is used for Xylogics Terminal Servers that has a Software Version greater than 9.0.

MicroCS, MicroAnnex (Xyl_MicroCS). This model type is used for Xylogics Terminal Servers that have a Software Version greater than 9.0.

Annex II (Xyl_AnnexII). The model type is used for Xylogics Terminal Servers with a Software Version of R7.1.

The SPECTRUM Model

SPECTRUM uses these device model types, for modeling supported Xylogics Terminal Servers: **Xyl_5390, Xyl_5390II, Xyl_CSMIM, Xyl_CSMIMII, Xyl_Micro, Xyl_AnnexII**. Xylogics models are represented in SpectroGRAPH views by Device icons. As Figure 1 shows, the appearance of the Device icon varies slightly depending on the kind of view it appears in.

Figure 1: Small and Large Device Icons

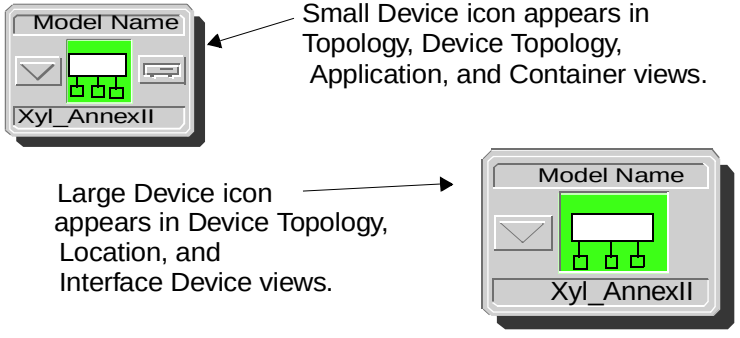
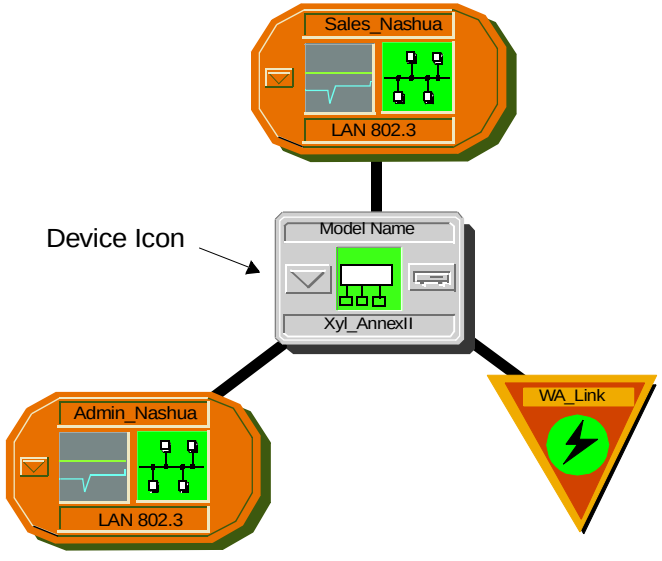

Model Name
Xyl_AnnexII
Small Device icon appears in Topology, Device Topology, Application, and Container views.
Large Device icon appears in Device Topology, Location, and Interface Device views.
Model Name
Xyl_AnnexII

Figure 2 shows a portion of a Topology view in which the Device icon representing the Xylogics model appears surrounded by icons representing the network entities which the device connects—in this case two Ethernet LANs and an Off-Page Reference icon representing a Wide Area Link to a corporate network.

Figure 2: Xylogics Device Icon in Topology View



Through its double-click zones and its **Icon Subviews** menu, the Device icon is your starting point for accessing the views and other displays that let you perform device management activities such as those listed in the Tasks section immediately following this introduction.

The rest of the documentation for this management module is organized according to view type, as follows.

- *Device Views* (Page 11)
- *Device Topology Views* (Page 35)
- *Application Views* (Page 36)
- *Performance Views* (Page 46)
- *Configuration Views* (Page 48)
- *Model Information Views* (Page 63)

Tasks

This section lists device management tasks alphabetically and provides links to descriptions of the views and/or tables used to perform the task.

Application Information (examine)

- *Application Views* (Page 36)

Device (configure)

- *Configuration Views* (Page 48)

Device Performance (monitor)

- *Device Views* (Page 11)
- *Device Performance View* (Page 46)

Interface Mask and Address (examine)

- *Secondary Address Panel* (Page 34)

Model Information (examine)

- *Model Information Views* (Page 63)

Model Redundancy (configure)

- *Device Configuration View* (Page 48)

Port Configuration (examine/modify)

- *Logical Device View* (Page 11)
- *Logical Interface Icons* (Page 12)
- *Device Configuration View* (Page 48)

Port (examine/enable/disable)

- *Interface Status View* (Page 33)
- *Configuration Views* (Page 48)

Device Views

This section describes the Device views and subviews available for models of Xylogics Terminal Server devices in SPECTRUM.

Device views use icons and labels to represent the modeled device and its components, such as modules, ports, and applications. There are twp types of Device views for Xylogics models.

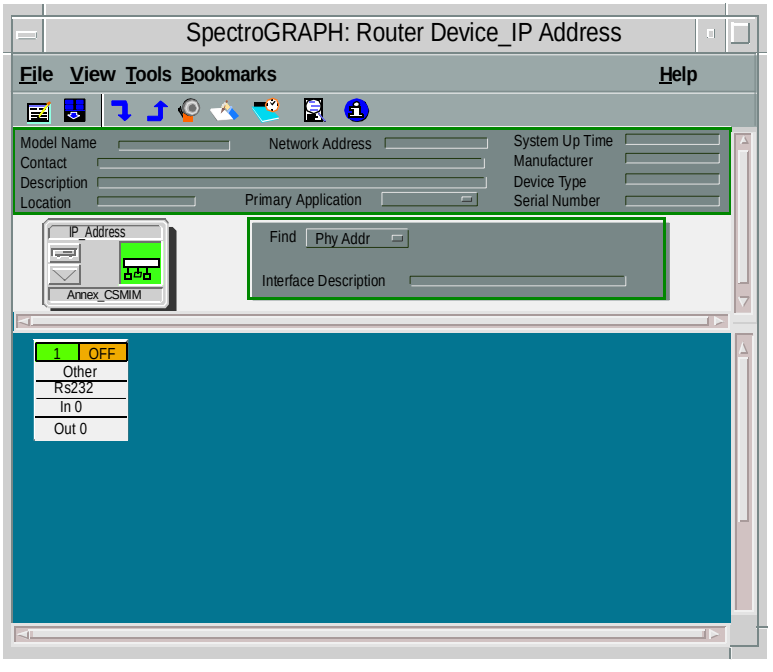
- *Logical Device View*
- *Interface Status View* (Page 33)

Logical Device View

Access: *From the **Icon Subviews** menu for the Xylogics Device icon, select **Device > Logical**.*

This view provides dynamic configuration and performance information for each of the device's serial/network I/O ports, which are represented by Interface icons in the bottom panel of the view, as shown in Figure 3. The middle panel of the view also displays a Device icon, which allows you to monitor the device operation and access other device-specific views.

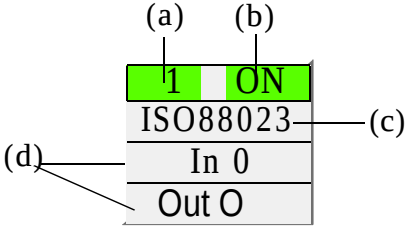
Figure 3: Interface Device View



Logical Interface Icons

Figure 4 shows a close-up of an Interface icon from an Interface Device view. Most of the informational labels on the icon also provide double-click access to other views, as explained in the following label descriptions.

Figure 4: Interface Icon



a *Interface Number Label*

b IF Status Label

c Interface Type Label

d Physical Address Label

Interface Number Label

This label displays the interface number.

IF Status Label

This label displays the current Operational Status of the interface (see Table 1). Note that the background color of the label also depends on the interface's current Administrative Status, which is set by the user (see *Interface Status View* on Page 33). This view can be accessed by double-clicking the label.

Table 1: Interface Status Label Colors

Color	Operational Status	Administrative Status	Label Text
Green	ON	ON	ON
Blue	OFF	Ott	Ott
Yellow	OFF	ON	Ott
Red	Testing	tttt	tttt

Interface Type Label

This label identifies the type of interface—e.g., Ethernet, FDDI, Other, etc. Double-click this label to access the *Secondary Address Panel* (Page 34).

Physical Address Label

This label displays the physical (MAC) address of the interface. Double-click the label to open the Interface Address Translation table, which cross-references network addresses (IP addresses) to physical(MAC) addresses for selected nodes between networks. Double-clicking on any column entry opens an address-specific Address Translation Table Information view. This view provides the same information as the corresponding row for the IF Address Translation.

Interface Icon Subviews Menu Options

Table 2 lists the Icon Subviews menu options available for the Interface icon.

Table 2: Interface Icon Subviews Menu

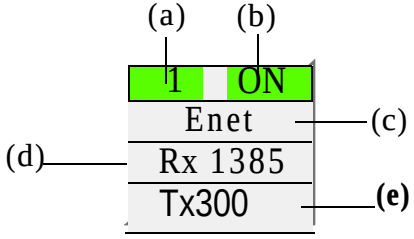
Option	Opens the...
Detail	Interface Detail view, which displays Packet, Error, and Discard Breakdown pie charts.
IF Status	*Interface Status View* (Page 33).
IF Configuration	*Model Information Views* (Page 63).
Model Information	Model Information view for the selected interface (see *Model Information Views* on Page 63).
IF Address Translation Table	Interface Address Translation Table view, which shows the Physical and Network address for each interface.
Secondary Address Panel	*Secondary Address Panel* (Page 34).

Ethernet Logical Interface Icon

The Ethernet Logical Interface icon consists of five zones, providing configuration and performance information for all Xylogics Terminal Server devices. Figure 5 provides a detailed illustration of the Ethernet Port Logical Interface

icon and the following sections detail each icon zone. Ethernet Logical Interface Icon.

Figure 5: Ethernet Logical Interface Icon



- **a** *Ethernet Interface Number*
- **b** Ethernet Logical Interface Status
- **c** *Ethernet Interface Configuration View*
- **d** *Interface Receive Statistics*
- **e** *Interface Receive Statistics*

Ethernet Interface Number

Click label a, Ethernet Logical Interface Number, to access the Interface Port Notes view.

Interface Status

Double-clicking label b, Ethernet Logical Interface Status, accesses the Ethernet Interface Status view. The Ethernet Interface Status view provides the following information for the Xylogics Terminal Server device's Ethernet interfaces:

Port

Provides the interface number for this port.

Type

The current type of this port.

Operational Status

The current operational state of the port (ON, OFF, or TEST).

Administrative Status

The desired operational state of the port (ON, OFF, or TEST). This button can be changed.

Ethernet Interface Configuration View

The Ethernet Interface Configuration view (label c) displays a text label and an appropriate background color to represent the current status of the interface. Text labels are **Enet** and **Loopback**.

Double-clicking label d accesses the Ethernet Interface Configuration view. The Ethernet Interface Configuration view provides the following information for the Xylogics Terminal Server device's Ethernet interfaces:

Interface
Provides the interface number for this port.

Operational Status
The current operational state of the port (ON, OFF, or TEST).

Administrative Status
The desired operational state of the port (ON, OFF, or TEST). This field can be changed.

Last Status Change
The System UpTime value when the port entered its current operational state.

Physical Address
The Ethernet (MAC) address of the port.

Bandwidth
The estimated bandwidth of the interface measured in bits per second. For interfaces that do not vary in bandwidth or for which no accurate estimate can be made, a nominal bandwidth is provided.

Largest Datagram Supported
The largest Maximum Transmission Unit (MTU) that can be transmitted or received by the port measured in octets.

Length of Output Packet Queue
The length of the outbound packet queue in packets.

Interface Receive Statistics

The Interface Receive Statistics view provides the following information on incoming port traffic (measured in packets received):

Unknown Protocol Packets Received
The number of discarded packets because of an unknown protocol.

Unicast Packets Delivered
The number of unicast packets delivered to a higher level protocol.

NonUnicast Packets Delivered
The number of non-unicast packets delivered to a higher level protocol.

Inbound Packets Discarded
The number of inbound packets discarded even though no errors were detected to make them undeliverable. Such packets may have been discarded to increase buffer space.

Inbound Errors
The number of packets containing errors preventing them from being delivered to a higher level protocol.

In addition the *Interface Receive Statistics* (Page 15) contains a gauge which measures the total number of octets received by the port. An **Octets Received** button accesses a rate graph displaying the total number of octets received by the port over a given timeframe.

Interface Send Statistics

The Interface Send Statistics view provides the following information on outgoing port traffic (measured in packets sent):

Outbound Packet Queue
The length of the outbound packet queue in packets.

Unicast Packets Requested
The number of unicast packets that a higher level protocol requested for transmission.

NonUnicast Packets Requested
The number of non-unicast packets that a higher level protocol requested for transmission.

Outbound Packets Discarded
The number of outbound packets discarded even though no errors were detected to prevent them from being transmitted. Such packets may have been discarded to increase buffer space.

Outbound Errors
The number of packets containing errors preventing them from being transmitted to a higher level protocol.

Octets Sent

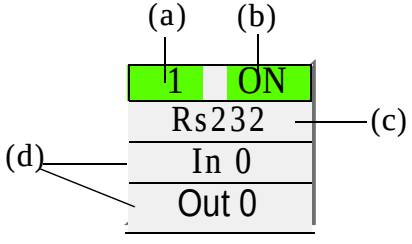
This button accesses a rate graph displaying the total number of octets transmitted by the port over a given timeframe.

In addition, the *Interface Send Statistics* (Page 16) contains a gauge which measures the total number of octets transmitted by the port.

Serial Port Logical Interface Icon

The Port Logical Interface icon consists of five zones, providing configuration and performance information. Figure 6 provides a detailed illustration of the Port Logical Interface icon and the following sections detail each icon zone.

Figure 6: Serial Port Logical Interface Icon



- **a** Serial Port Logical Interface Number
- **b** Serial Port Interface Status
- **c** Serial Port Performance View
- **d** Serial Port Configuration View

Interface Number

Click label a to access the Interface Port Notes view.

Port Interface Status

Double-clicking label b accesses the Port Interface Status view. The Port Interface Status view provides the following information for the serial port interfaces:

Port
Provides the interface number for this port.

Type
The current type of this port.

Operational Status
The current operational state of the port (`ON`, `OFF`, or `TEST`).

Administrative Status
The desired operational state of the port (`ON`, `OFF`, or `TEST`). This field can be changed.

Serial Port Configuration View

The Serial Port Configuration view allows you to configure serial port parameters. You can click label c within the Serial Port Logical Interface icon to access the Serial Port Configuration view.

The Serial Port Configuration view fields for the CSMIM and Annex2 differ from the CSMIMII, MicroAnnex, MicroCS, and 5390/5390-2; each view type with the associated fields is described below.

Serial Port Configuration View for the CSMIM and Annex2

Port
The ID for this port.

Dedicated Port
Defines the application name or TCP port number to which this port can connect. The allowed names are: **telnet**, **rlogin**, and **call**.

Dedicated Addr
Defines the Internet address of the host to which this port can connect to.

Term Var
This parameter displays the type of terminal using the CLI connection.

Location
The location of the Xylogics Terminal Server device.

Buffer Size
The number of 256-byte buffer blocks allocated to receive or send input characters from this port.

Prompt
This parameter defines a port-specific CLI prompt.

Type
This parameter allows you to configure the port. Possible settings are: **hardwired**, **dialing**, **x25**, **tn3270**, **pc**, **terminal**, **modem**, and **printer**.

Mode
This parameter sets the access method to a serial line port either from the device to the terminal server or from the network through the server to the device. Table 3 describes the access methods. The default is “cli”.

Table 3: Access Information

Method	Description
cli	Provides access to the CLI for a port connected to a terminal or for an incoming modem. T
slave	Provides access to a port through the port server but does not provide access to the CLI.

Table 3: Access Information

Method	Description
unused	Indicates that the port has no connection.
adaptive	Provides a port with both cli and slave capability.
slip	Provides a port that can perform a network interface using SLIP.
dedicate	Provides a port with access to only one specific host as defined in the Dedicated Addr parameter.
ppp	Provides a port that can perform as a network interface using PPP

Allow Broadcasts
If enabled, allows the port to receive broadcast messages generated by the broadcast and boot commands.

Broadcast Direction
This parameter defines the direction an administrative broadcast message is sent on a port. This parameter is valid only if the Mode parameter is set to slave. If network is specified, administrative broadcast messages are sent out of the network side of the connection. If Port is specified, broadcast messages are sent out of the port side of the connection. The default is “Port”.

Imask 7Bit
If enabled, the port ignores the eighth bit of received characters. The default is “Disabled”.

CLI Imask7
If enabled, CLI input is masked to seven bits. If disabled, eight bit ASCII input is expected. The default is “Enabled”.

Banner
Allows you to enable or disable the Annex banner and message-of-the day.

Flow Control

This button accesses the Serial Port Flow Control and Signal Parameters view, which is described later in this chapter.

Port Timers

This button accesses the Serial Port Timers and Counters view, which is described later in this chapter.

Port Security

This button accesses the Port Security Parameters view, which is described later in this chapter.

CLI Line Edit

This button accesses the CLI Line Editing Parameters view, which is described later in this chapter.

SLIP/PPP Parameters

This button accesses the Serial Networking Parameters view, which is described later in this chapter.

Serial Port Configuration View for the CSMIMII, MicroCS, MicroAnnex, and 5390/5390-2

Port
The ID for this port.

Buffer Size
The number of 256-byte buffer blocks allocated to receive or send input characters from this port.

Dedicated Port
Defines the application name or TCP port number to which this port can connect. The allowed names are **telnet**, **rlogin**, and **call**.

Dedicated Addr
Defines the Internet address of the host to which this port can connect to.

Term Var
This parameter displays the type of terminal using the CLI connection.

Location
The location of the Xylogics Terminal Server device.

Prompt
This parameter defines a port-specific CLI prompt.

Apple Talk Node ID
The default Appletalk node ID hint that is used by the Annex on this port. The address consists of two sections separated by a dot; the address is in either hex or decimal format.

Printer Host
The IP address of the machine running a Berkely-style lpd server.

Printer Name
A valid printer name contained in the /etc/printcap file on the remote host.

Location
A descriptive string for this port. This string is displayed by the CLI who command.

Modem Var
A string defining the type of modem attached to the serial port.

Term Var
A string defining the type of terminal attached to the serial port.

Type
This parameter allows you to configure the port. Possible settings are: **hardwired**, **dialing**, **x25**, **tn3270**, **pc**, **terminal**, **modem**, and **printer**.

Mode
This parameter sets the access method to a serial line port either from the device to the terminal server or from the network through the server to the device. Table 4 describes the access methods. The default is “cli”.

Table 4: Access Methods

Method	Description
cli	Provides access to the CLI for a port connected to a terminal or for an incoming modem.
slave	Provides access to a port through the port server but does not provide access to the CLI.
adaptive	Provides a port with both cli and slave capability.
unused	Indicates that the port is not configured.

Table 4: Access Methods

Method	Description
slip	Provides a port that can perform as a network interface using SLIP.
dedicate	Provides a port with access to only one specific host as defined in the Dedicated Addr parameter.
ppp	Provides a port that can perform as a network interface using PPP.
ara	provides a port that can perform as a network interface using ppp.
invalid	marks the port as invalid.

DTR Signal
Controls the Data Terminal Ready output control signal for this serial port. Valid set values are **high**, **low**, or **unknown**.

RTS Signal
Controls the Request to Send output control signal for this serial port. Valid set values are **high**, **low**, or **unknown**.

Autobaud
When enabled, specifies that the line speed should be determined when opening the connection. The default is **disabled**.

Allow Broadcasts
If enabled, allows the serial port to receive broadcast messages generated by the broadcast and boot commands.

Broadcast Direction
Defines the direction in which a administrative broadcast message is sent. This parameter is valid only if the Mode parameter is set to save. If network is specified, administrative broadcast messages are sent out of the network side of the connection. If Port is specified, broadcast messages are sent out of the port side of the connection. The default is “Port”.

Session Mode
The default session mode when the DECServer command interface is configured. The default is interactive.

ARAP V.42bis
Controls whether V.42bis compression is done during an ARAP session. This button may be **enabled** or **disabled**.

Banner
Allows you to enable or disable the Annex banner and message-of-the day.

Imask 7Bit
If enabled, the port ignores the eighth bit of received characters. The default is “Disabled”.

CLI Imask7
If enabled, CLI input is masked to seven bits. If disabled, eight bit ASCII input is expected. The default is “Enabled”.

CLI Interface
Specifies either a UNIX or VMS command line interface. The default is **Unix**.

Flow Control

This button accesses the Serial Port Flow Control and Signal Parameters View, which is described later in this chapter.

Port Timers

This button accesses the Serial Port Timers and Counters view, which is described later in this chapter.

Port Security

This button accesses the Port Security Parameters view, which is described later in this chapter.

CLI Line Editing

This button accesses the CLI Line Editing Parameters view, which is described later in this chapter.

SLIP/PPP Parameters

This button accesses the Serial Networking Parameters view, which is described later in this chapter.

LAT Parameters

This button accesses the LAT Port Parameters view, which is described later in this chapter.

Serial Port Flow Control and Signal Parameters View

To access the Serial Port Flow Control and Signal Parameters view, click the Serial Port Configuration view **Flow Control** button. This view provides the following information about serial port and signal parameters:

Control Lines

The type of hardware control lines used on the port. Table 5 describes the available control types. The default is “none”.

Table 5: Hardware Control Lines

Control Type	Description
none	Does not implement hardware control lines.
flowcontrol	Configures the control lines for flow control using RTS/CTS bust does not activate hardware flow control.
modemcontrol	Configure the control lines for modem control using DCD/DTR hand shaking.
both	Allows both flow and modem control.

Need DSR

Enabling this parameter allows the terminal server to send a DSR (Data Set Ready) signal to determine if there is a device attached to the corresponding serial line. The default is “Disabled”.

IXany Flow Control

Enabling this parameter treats any input character as a start (^Q) character even if output has been suspended by a stop (^S) character. The default is “Disabled”.

Bidirectional Modem

Enabling this parameter allows network connections to the port without having to wait for a Data Carrier Detect (DCD) modem signal. The default is “Disabled”.

Input Buffer Size

This parameter regulates the number of per port buffers in 512-byte blocks. It is valid for serial port connections only.

Input Stop Char

The control character sequence that stops input if XON/XOFF flow control is enabled. The default is “CTRL-S (^S)”.

Input Start Char

The control character sequence that restarts input if XON/XOFF flow control is enabled. The default is “CTRL-Q (^Q)”.

Output Stop Char

The control character sequence that stops output if XON/XOFF flow control is enabled. The default is “CTRL-S (^S)”.

Output Start Char
The control character sequence that restarts output if XON/XOFF flow control is enabled. The default is “CTRL-Q (^Q)”.

Serial Port Timers and Counters View

To access the Serial Port Timers and Counters view, click the Serial Port Configuration View **Port Timers** button. This view provides the following information about the serial port timer and counter parameters:

Short Break
Enabling this parameter returns the user to the CLI prompt if a break shorter than two seconds is received. This parameter is only valid for a CLI connection. The default is “Enabled”.

Long Break
Enabling this parameter returns the user to the CLI prompt if a break greater than two seconds is received. This parameter is only valid for a CLI connection. The default is “Enabled”.

Input Is Activity
Enabling this parameter resets the inactivity timer when input is received at the port. The default is “Enabled”.

Output Is Activity
Enabling this parameter resets the inactivity timer when output is transmitted to the port and places an entry in the who table if the Type parameter is hard wired. The default is “Disabled”.

Reset Inactivity Timer
Resets the Port Inactivity Timer according to input or output activity.

CLI Inactivity Timer
The amount of time, in minutes, that the terminal server waits before hanging up the port if it becomes idle. The CLI Inactivity Timer only effects ports with no active CLI jobs. Allowable values range from 0 (or off) to 254 minutes. The default is “0”.

Port Inactivity Timer
The amount of time, in minutes, that a port can remain inactive. Allowable values range from 0 (or off) to 254 minutes. The default is “0”.

TCP Keep Alive Timer
The default keep-alive value for connections to this serial port. If this is zero, use the value specified by TCPkeepalive.

Forwarding Timer
This parameter sets the time, in five millisecond intervals, that will elapse before forwarding

received data. If new data is received before the timer expires, the terminal server resets the timer and defers sending the data.

Forwarding Count
This parameter controls the forwarding process for the port. If set to a non-zero value, the port will not forward received characters until the specified number of characters is reached. When set to zero, the port will wait for the Forwarding Timer to expire before forwarding characters. Allowable values range from 0 to 255. The default is “0”.

Port Security Parameters View
This view provides the following information about the port security parameters:

CLI Security
Enabling this parameter activates security for the terminal server. This parameter is mandatory if any Xylogics Terminal Server device port security mechanisms are to be used. The default is “Disabled”.

Connect Security
Enabling this parameter activates a security mechanism to control access from the CLI to the network. A user must receive authorization to connect to a host on the network. The default is “Disabled”.

Server Security
Enabling this parameter activates a security mechanism to control access to the port from the port server. Only authorized users can access the port. The default is “Disabled”.

Vci Login Password
Enables the port password if the port is configured as a DECserver interface port. The default is enabled.

Vci Login Timeout
Enables a login timer if the port is configured as a DECServer interface port. The default is disabled.

Apple Talk Security
The default AppleTalk node ID hint that is used by the Annex on this port.

ARAP Guest Login
If enabled, allows ARAP guest login service.

IP Security
Controls whether IP security is enabled on this port. The default is enabled.

IP Classification
Configured as a DECServer interface port. The default is disabled.

Password
The local password for the port. This parameter can be used as a backup for other security mechanisms. If security is enabled, cli security = disabled, and the port password is set, you must enter the password regardless of the mode parameter's setting.

User Name
The port's user name.

CLI Line Editing Parameters View
This view provides the following information about CLI line editing functions:

Echo
Enabling this parameter echoes all characters as they are typed. The default is "Disabled".

Hardware Tabs
Enabling this parameter allows the terminal to expand ASCII tab characters if the terminal does not support hardware tabs. This parameter only effects CLI. The default is "Enabled".

Telnet CRLF
Enabling this parameter translates a carriage return into a carriage return followed by a line feed. Disabling this parameter translates a carriage return into a carriage return followed by a null string. The default is "Disabled".

Map To Upper
Enabling this parameter converts case from lower to upper for characters sent from a terminal to the terminal server. This parameter is enabled for older terminals that do not support upper case characters. The default is "Disabled".

Map To Lower
Enabling this parameter converts case from upper to lower for characters sent from a terminal to the terminal server. This parameter is enabled for older terminals that do not support lower case characters. The default is "Disabled".

Telnet Escape
Defines the character that returns you to the telnet prompt when using the CLI telnet command. Setting this parameter to "U" disables the escape. The default is "CTRL-]" (^]).

Redisplay Line
Defines the reprint line character. The default is "CTRL-R" (^R).

Toggle Output
Defines the flush control character used to flush the output buffer. The default is "CTRL-O" (^O).

Newline Echo
Defines whether a carriage return is echoed as an enabled carriage return or a carriage return and line feed. Choices are **CR** and **CR/LF**.

Attention Char
Defines a control character sequence that returns you to the CLI prompt.

Erase Char
Defines the character erase control character sequence at the CLI level. The default is the "Delete" key (displayed as ^?); values may be displayed as one or two characters.

Erase Word
Defines the word erase control character sequence at the CLI level. The default is "CTRL-W" (^W).

Erase Line
Defines the line erase control character sequence at the CLI level. The default is "CTRL-U" (^U).

Char Erase
Enabling this parameter echoes the character or word erase character for a video terminal (the previous character looks like it has been erased). Disabling this parameter echoes the erase or word character for a hard copy terminal. The default is "Enabled".

Line Erase
Enabling this parameter echoes line erase for a video terminal. It erases all characters on the line and moves the cursor back to the beginning of a line. Disabling this parameter echoes the line erase character for a hard copy terminal. It echoes the erase character and a new line so the deleted line is still visible. The default is "Enabled".

Serial Networking Parameters

Click the **SLIP/PPP Parameters** button from the CSMIMII and MicroCS models to access the following parameters:

General Parameters

Port
The selected serial port on this annex.

Local IP Addr
The Internet address for this port. The default is "0.0.0.0".

Remote IP Addr
The Internet address for the host at the other end of the serial line. The default is "0.0.0.0".

Metric
Defines the hop count to the remote end of the SLIP or PPP interface. Setting this object to 0 defaults to a value of 1.

Phone Number
The phone number used for this port when doing demand dialing.

Net Inactivity
The number of minutes allowed for serial protocol inactivity on the port. When the interval expires, the port is automatically reset. A value of 0 disables the timer.

Dialup Addresses
When enabled, the Annex requests the PPP dial-up addresses from the host-based ACP. The default is Disabled.

Demand Dial
When enabled, allows the Annex to instruct the modem attached on the port to dial the phone number.

SLIP Security
This parameter controls dial up SLIP access. If enabled, and security is enabled on the Xylogics Terminal Server device, access to the slip command is restricted using the Access Control Protocol (ACP). The default is “Disabled”.

Do Compression
Enabling this parameter starts TCP/IP header compression on this SLIP link. The terminal server negotiates for TCP/IP compression on each connection. The default is “Disabled”.

Allow Compression
Enabling this parameter allows the terminal server to use TCP/IP header compression if the other end of the SLIP link initiates compression. The default is “Disabled”.

Slip Parameters

Subnet Mask
The Internet subnet mask for the interface. The default is “0.0.0.0”.

Load Dump Host
The Internet address of the host from which the terminal server receives a load or to which the server dumps over the SLIP interface. The default is “0.0.0.0”.

Allow Dumps
Enabling this parameter allows dumping across a SLIP link. The default is “Enabled”.

MTU Size
This parameter sets the Maximum Transmission Unit (MTU) size on a compressed SLIP port. The possible MTU selections are **large** (1006) or **small** (256). The default is “small”.

Discard ICMP
Enabling this parameter discards any ICMP packets transmitted to the SLIP link to reduce unnecessary traffic. The default is “Disabled”.

SLIP TOS
Enabling this parameter provides type-of-service queuing on the SLIP link. The terminal server will transmit interactive traffic (e.g., telnet, rlogin, and ftp) before transmitting other traffic. The default is “Disabled”.

PPP Parameters

Remote Username
The PPP ports user’s name. The parameter is displayed as <set> or <unset>. The default is “<unset>”.

Remote Password
The PPP port user’s password. The parameter is displayed as <set> or <unset>. The default is “<unset>”.

MRU
The Maximum Receive Unit (MRU) parameter. Values range from 64 to 1500. The default is “1500”.

ACM
The Asynchronous Control Mask (ACM) parameter specifies which of the first 32 bytes (0x0 to 0x1F) can be transmitted as clear text and which should be protocol escaped before being transmitted. The default is “0x00000000”.

Protocol
The PPP protocol running on the interface. Options are ipcp, atcp, and all; the default is “all”.

Security Protocol
This parameter requires remote users to pass a security check before communicating with the terminal server. The options are Password Authentication Protocol (PAP) or none. The default is “none”.

The CSMIM, ANNEX11, and 5390 provide the SLIP Parameters view. This view displays the following information about the SLIP port parameters:

Port
The selected serial port on this annex.

SLIP TOS
Enabling this parameter provides type-of-service queuing on the SLIP link. The terminal server will transmit interactive traffic (e.g., telnet, rlogin, and ftp) before transmitting other traffic. The default is “Disabled”.

MTU Size
This parameter sets the Maximum Transmission Unit (MTU) size on a compressed SLIP port. The possible MTU selections are **large** (1006) or **small** (256). The default is “small”.

Do Compression
Enabling this parameter starts TCP/IP header compression on this SLIP link. The terminal server negotiates for TCP/IP compression on each connection. The default is “Disabled”.

Allow Compression
Enabling this parameter allows the terminal server to use TCP/IP header compression if the other end of the SLIP link initiates compression. The default is “Disabled”.

Filter ICMP Packets
Enabling this parameter discards any ICMP packets transmitted to the SLIP link to reduce unnecessary traffic. The default is “Disabled”.

Allow Dumps
Enabling this parameter allows dumping across a SLIP link. The default is “Enabled”.

SLIP Security
This parameter controls dial up SLIP access. If enabled, and security is enabled on the Xylogics Terminal Server device, access to the slip command is restricted using the Access Control Protocol (ACP). The default is “Disabled”.

Local IP Addr
The Internet address for this port. The default is “0.0.0.0”.

Remote IP Addr
The Internet address for the host at the other end of the serial line. The default is “0.0.0.0”.

Subnet Mask
The Internet subnet mask for the interface. The default is “0.0.0.0”.

Load Dump Host
The Internet address of the host from which the terminal server receives a load or to which the server dumps over the SLIP interface. The default is “0.0.0.0”.

Metric
The hop count to the remote end of the serial line. This parameter should be modified only if a different route other than the SLIP interface is to be used to the remote end. The default is “0”.

LAT Port Parameters View

This view provides the following information about the LAT port parameters:

Port
The number of serial ports on this annex.

LAT-B Decoding
Enabling this parameter allows the terminal server to decode a LAT host’s data-b packet. The default is “Disabled”.

Authorized Groups
This parameter specifies which remote group codes are accessible to users on the port.

PPP Port Parameters View

The CSMIM, AnnexII, and 5390 provide the PPP Parameters view. This view displays the following information about the PPP port parameters:

PPP Security Protocol
This parameter requires peers to pass a security check before communicating with the terminal server. The options are Password Authentication Protocol (PAP) or none. The default is “none”.

Dialup Address Req
Enabling this parameter allows the terminal server to request the endpoint address from the Access Control Protocol (ACP). This parameter, if enabled, overrides both Local IP Addr and Remote IP Addr. The address is based on the user’s login. The default is “Disabled”.

MRU
The Maximum Receive Unit (MRU) parameter. Values range from 64 to 1500. The default is “1500”.

ACM
The Asynchronous Control Mask (ACM) parameter specifies which of the first 32 bytes (0x0 to 0x1F) can be transmitted as clear text and which should be protocol escaped before being transmitted. The default is “0x00000000”.

Metric
The hop count to the remote end of the serial line. This parameter should be modified only if a different route other than the PPP interface is to be used to the remote end. The default is”0”.

Local IP Addr
The Internet address for this port. The default is “0.0.0.0”.

Remote IP Addr
The Internet address for the host at the other end of the serial line. The default is “0.0.0.0”.

Remote Username
The PPP ports user’s name. The parameter is displayed as <set> or <unset>. The default is “<unset>”.

Remote Password
The PPP port user’s password. The parameter is displayed as <set> or <unset>. The default is “<unset>”.

Serial Port Performance View

The Serial Port Statistics view displays two color-coded pie charts presenting breakdowns of Port

Performance statistics. Each statistic is presented as a total amount since the Xylogics Terminal Server device was initialized and as a percentage of overall traffic. Table 6 and Table 7 display the information provided by each chart.

Table 6: Char Breakdown Pie Chart

Statistic	Description
In chars	The total number of characters received by the port.
Out Chars	The total number of characters transmitted by the port.

Table 7: Error Breakdown Pie Chart

Statistic	Description
Framing Errors	The total number of framing errors detected for the port.
Overrun Errors	The total number of overrun errors detected for the port.
Parity Errors	The total number of parity errors detected for the port.

Port Interface Status View

Access: *Double-click label b of the Logical Interface Device icon.*

This view provides the following information:

Port
Provides the interface number for this port.

Type
The current type of this port.

Operational Status
The current operational state of the port.

Administrative Status
The desired operational status of the port. This can be edited.

Interface Status View

Access: *From the **Icon Subviews** menu for the Interface icon in the Interface Device view, select **IF Status**.*

This view provides information on the operational status of the interface and allows you to enable or disable the port.

Operational Status
The current state of the interface (`ON`, `OFF`, or `Testing`).

Administrative Status

This button allows you to select the desired operational state of the interface (`ON`, `OFF`, or `Testing`).

Secondary Address Panel

Access: *From the **Icon Subviews** menu for the Interface icon in the Interface Device view, select **Secondary Address Panel**.*

This panel provides a table of IP addresses and masks obtained from the Address Translation table within the device's firmware. You can change the current address displayed in the **IP Address** field by selecting an entry from the table in this panel and clicking the **Update** button.

Device Topology Views

This section provides brief descriptions of the Device Topology views available for models of Xylogics Terminal Server devices in SPECTRUM.

Device Topology views show the connections between a modeled device and other network entities. There is one kind of Device Topology views available for Xylogics models:

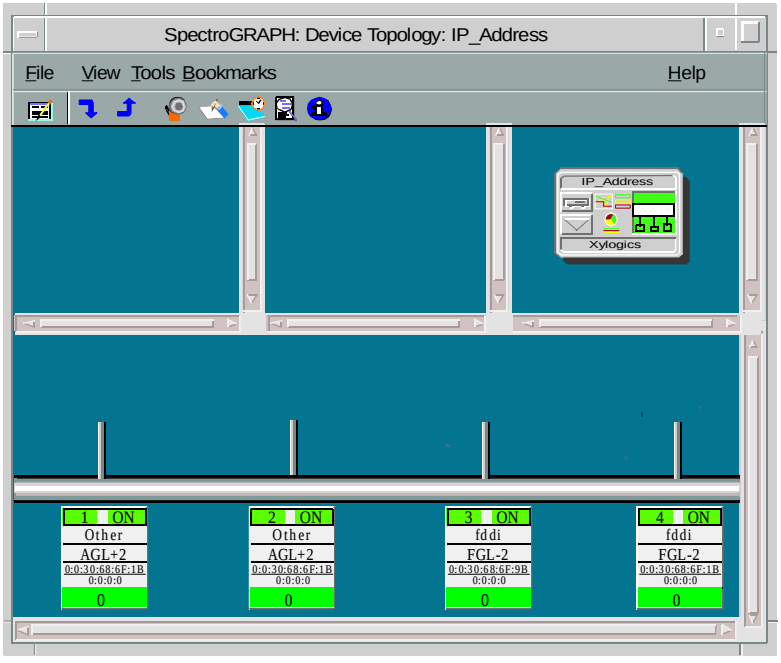
- *Interface Device Topology View*

Interface Device Topology View

Access: *From the **Icon Subviews** menu for the Xylogics Device icon, select **DevTop**.*

The lower panel of the Interface Device Topology view (Figure 7) uses interface icons to represent the device's serial/network I/O ports. These icons provide the same information and menu options as those in the *Logical Device View* (Page 11). If there is a device connected to a particular interface, a device icon appears on the vertical bar above the interface icon along with an icon representing the network group that contains the device.

Figure 7: Interface Device Topology View



Application Views

This section describes the main Application view and the associated application-specific subviews available for models of Xylogics Terminal Server devices in SPECTRUM.

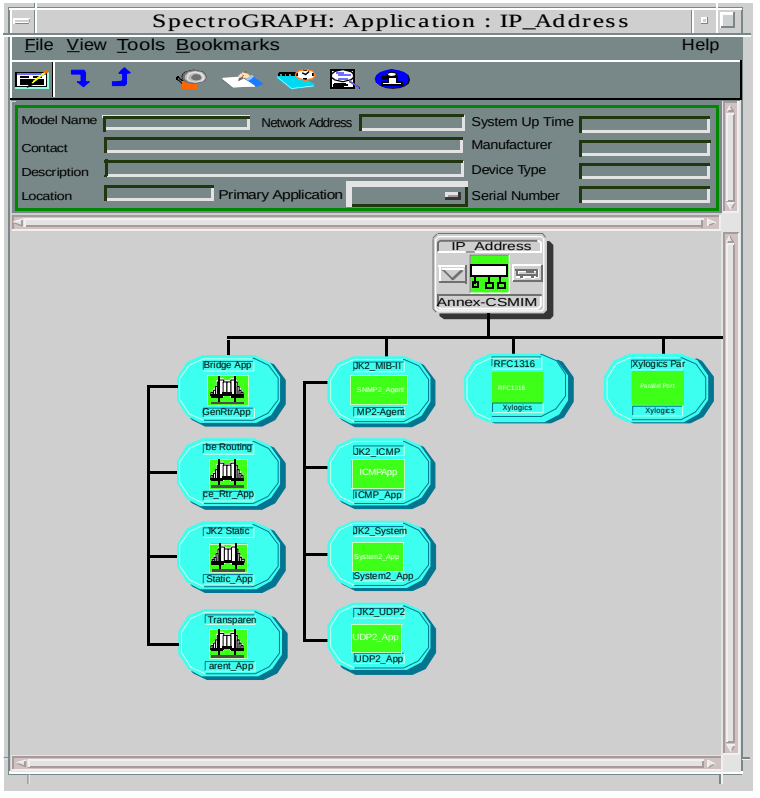
Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***Application****.*

When a device model is created, SPECTRUM automatically creates models for each of the major and minor applications supported by the device. The Application view identifies all of these application models, shows their current condition status, and provides access to application-specific subviews.

Figure 8 shows an Application view in its default mode (Icon) where each of the application models is represented by an Application icon (see Figure 9 for a close-up). The Application icons are arranged hierarchically under a Device icon, with major applications in the top row and their respective minor applications stacked directly below.

If you prefer to see applications displayed by name only, in a single vertical list, select **View > Mode > List**.

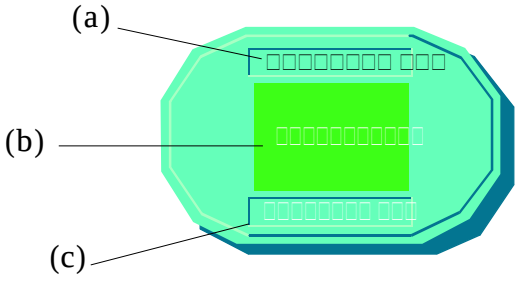
Figure 8: Xylogics Terminal Application View



Application Icons

When the Application view is in Icon mode, each of the application models is represented by an Application icon (Figure 9). Double-clicking the Model Name label (a) at the top of the icon opens the associated Model Information view—see *Model Information Views* (Page 63). For some applications, the Model Type label (c) at the bottom of the icon is also a double-click zone, which opens an application-specific view. Any views accessible through these double-click zones are also accessible from the Application icon's **Icon Subviews** menu.

Figure 9: Application Icon



a Model Name Label / Model Information View

b Condition Status Label

c Model Type Label / Application-Specific View

Supported Applications

Xylogics Terminal Server devices support both common and device-specific applications.

Applications that are common to many of the different kinds and makes of devices managed by SPECTRUM are listed in Table 8 along with the corresponding documentation topics.

The views and subviews available for Motorola Vanguard device-specific applications are described in the rest of this section, grouped by major applications as listed below:

- *Character Stream Application View (RFC1316App)* (Page 38)
- *Parallel Port Application* (Page 42)
- *Xylogics Modem Application View* (Page 43)
- *Xyl Parallel Application Views* (Page 44)

Table 8: Common Applications

Application	For more info, see...
Routing (GenRtrApp)	***Miscellaneous Applications***
Ethernet (EthernetApp)	***Miscellaneous Applications***
Bridging (GenBridgingApp)	***Bridging Applications***
MIB-II (SNMP2_Agent)	***MIB-II Applications***

Character Stream Application View (RFC1316App)

The RFC 1316 application supports the following application-specific view.

Character Port Table

Access: *Double-clicking on any portion of the text label on the RFC1316App Application icon.*

This table provides the following information:

Port ID
An administratively assigned identifier for the port.

Type
The type of port: `Physical` if the port represents an external hardware connector, `Virtual` if it does exist.

Operstat
The port's operational state. The operational states are described in Table 9 below.

Table 9: Character Port Operational States

Operational States	Description
Up	Indicates that the port is able to function normally.
Down	Indicates the port's inability to function for operational or administrative reasons.
Maintenance	Indicates that the port is in maintenance mode (e.g., running a test).
Absent	Indicates that port hardware is not present.
Active	Indicates that the port is up with user present (e.g., logged in).

Admin Status
The status of this port.

AdminOrgin
The origin for establishing the session on the port.

Sessions
The number of open sessions on the port that are in the connecting, connected or disconnecting state.

Character Port Detail View

This views contains the following information:

Port ID
Number identifier for the port.

Port Type
The port's type: **Physical** if the port represents and external hardware connector, **Virtual** if it does not.

Operational Status
Display the port's operational status.

Port Name
The port's assigned name.

Administrative Status

This button displays the port's desired state, and allows you to modify the value. The administrative states are described in table.

Table 10: Character Stream Port Administrative States

Administrative State	Description
Enabled	Indicates that the port is allowed to pass characters and form new sessions.
Disabled	Indicates that the port is allowed pass characters but form new sessions.
Off	Indicates that the port is in maintains mode (e.g. running a test).
Maint.	Indicates that the port is not allowed to pass characters or have any sessions.

System Up Time of Last Change

The value of the System Up Time at the time the port entered its current operational state. If the current state was entered prior to the last reintialization of the local network management subsystem, then this object contains a value of zero.

Port Reset

This button allows you to force the port hardware and software into a clean, initial state, disconnecting all to the port's existing sessions.

Session Index

References the session number for the port. A port's session indexes need not be sequential and may be reused for different ports.

Number of Sessions

The number of open sessions on the port that are in the connecting, connected, or disconnecting state.

Maximum Sessions

The maximum number of concurrent sessions allowed on the port. A value of 1 indicates no maximum.

provides definitions of the fields available in the Session table.

Session Origins

Allows the user to set the administratively allowed origin for establishing a session on the port. Table 11 provides descriptions of Session origins.

Table 11: Origin Descriptions

Origin Type	Description
Dynamic	Network or local session establishment.
None	Disallows session establishment.
Network	Allows network session establishment.
Local	Allows local session establishment.

Session Table

Accesses the Sessions table, which provides information on the current sessions on the device. The Print button allows you to print out a copy of the table to a printer or a file. Table 12

Table 12: Session Table Descriptions

Statistic	Description
Port ID	Name for the port.
SessID	A reference to additional local MIB information. This should be the highest available related MIB, corresponding to charSessProtocol, such as Telnet. For example, the value for a TCP connection (in the absence of a Telenet MIB) is the object identifier of tcpCONNState.
State	The current session's operational state, disregarding flow control, is one of the following: connected - indicates that character data could flow on the networks side of a session, connecting - indicates moving form nonexistent toward "connected", disconnecting - indicates moving from "connected" or "connecting" to nonexistent.

Parallel Port Application

This application provides the following views and information. Double-click any field in this view to access the Parallel Port Details view.

Parallel Port Table

Access: *Double-Click the text area of the Parallel Port Application icon.*

This table provides the following information:

Port ID
The name of the port.

Port Type
The port's hardware type. Possible values are: `centronics`, `dataproducts`, or `other`.

In Signals
The number of input signals for the port that are displayed in Parallel Port Input Signals table.

Out Signals
The number of output signals for the port that are displayed in the Parallel Port Input Signals table.

Parallel Port Detail View

Access: *Double-click any text field in the Parallel Port table.*

The Parallel Port Detail view provides configuration information on a selected entry from the Parallel Port table, and allows you to modify the configuration values. The Print button allows you to print out a copy of the table to a a printer of file. This view provides the following information:

Port ID
Identifier for this port.

Port Type
The port's hardware type.

Input Signals
The number of input signals for the port are displayed in the Parallel Port Input Signals table.

Click the Detail button to access the Parallel Port Output Signal table. This table list port output control signals and contains entries only for this signals the software can detect.

Port ID
The ID for this port.

Signal Name
The name for the hardware's signal. Possible values are: `power`, `online`, `busy`, `paperout`, and `fault`.

State
Indicates the current signal state. Possible values are: `none`, `off`, and `on`.

Changes
The number of times the signal has changed from `on` to `off`.

Xylogics Modem Application View

The application provides access to the Modem Call Table view. This Modem Call table represents phone call statistics and accounting parameters, and is cleared each time the Annex is rebooted. When the number of archived calls exceeds the defined maximum, the oldest terminated call is replaced by new call information.

Modem Calls Table

Access: *Double-click any text label on the XylModemApp icon, or select Modem Table from the* ***Icon Subviews*** *for the XylModemApp.*

This table provides the following information:

Maximum Table Entries
Represents the number of call for which modem call accounting information is kept.

Port
The port number on which the phone call took place.

Modem Type
The type of modem.

Call Time
The time when the call took place.

Number Called
The number to which this call was made. If the call was not initiated by the Annex, the value is returned as a zero length string.

Duration
The length of the phone call.

Username
The name of the user associated with this port at the time of the call.

Status
Describes the status of the call. Possible value are: `Active`, `Normal Termination`, or `Aborted`.

Xyl Parallel Application Views

The Xyl Parallel Application provides one application-specific view; the Parallel Port Table view. Table 13, below, provides descriptions and associated model type for device supporting the Xyl Parallel Application.

Table 13: Xyl Parallel Application Device Types

Description	Model Type
Micro Annex	Xyl_MicroCS
Micro CS	Xyl_MicroCS
Annex II	Xyl_CSMIM Xly_CSMIMII
Annex II	Xyl_CSMIM

Parallel Port View

Access: *From the **Icon Subviews** for the XylPortApp icon, select **Parallel Port Table**.*

The fields for this table are described in the next section, Xylogics Parallel Port Configuration view.

Xylogics Parallel Port Configuration View

Access: *Double-click any column in the Parallel Port view to open the Xylogics Parallel Port Configuration view.*

The Parallel Port Configuration view provides configuration information for the parallel ports. The fields for this view, similar to the column heading fields in the Parallel Port table, are described below.

Index
A value for each interface.

Width
The defined maximum number of characters per printer line.

TCP Keep Alive
The default keep-alive for connections to this parallel port.

CR/LF

When **enabled**, the Annex converts a carriage-return character for carriage-return/line-feed.

Hardware Tabs

This parameter controls whether the Annex sends a tab character to the printer. If **disabled**, the tab is replaced with spaces.

Map to Upper

When **enabled**, the Annex translates all lower case characters to upper case before transmitting the characters to the printer.

Speed

The current printer speed. The values are normal or high-speed.

Interface

Specifies the type of printer attached to the port. Printer choices are Centronics or Dataproducts.

Performance Views

This section provides brief descriptions of the Performance views available for models of Xylogics Terminal Server devices in SPECTRUM.

Performance views provide statistical information about the operation of the device and packet information for the device and its ports. The following performance views are described in this section:

- *Device Performance View*
- *Performance View* (Page 47)

For more information on Performance views, refer to the ***SPECTRUM Views*** documentation.

Device Performance View

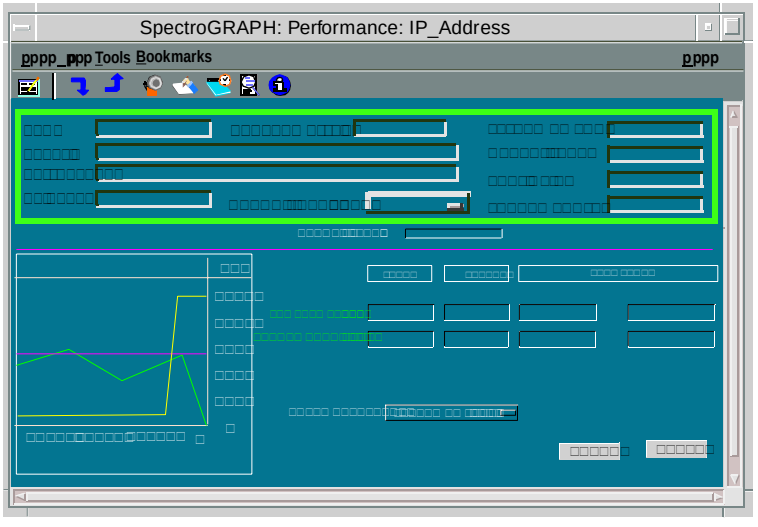
Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***Device Performance.***

This view (Figure 10) includes both a graph and a table that show current, average, and peak values for the following performance statistics:

- CPU Utilization Threshold
- Buffer Utilization Threshold

The view also provides button access to the Enterprise Alarm Manager and the Event Log.

Figure 10: Device Performance View



Performance View

Access: *From the **Icon Subviews** menu for the Xylogics Device icon, select **Performance.***

This view provides the following performance statistics about the packets being passed through the device:

- Frame Rate
- % Delivered
- % Forwarded
- % Transmitted
- % Error
- % Discarded

Configuration Views

This section describes the various Configuration views and subviews available for models of Xylogics Terminal Server devices in SPECTRUM.

Configuration views allow you to view and modify current settings for the modeled device and its interfaces, ports, and applications. The following Configuration views are available for models of Xylogics Terminal Server devices:

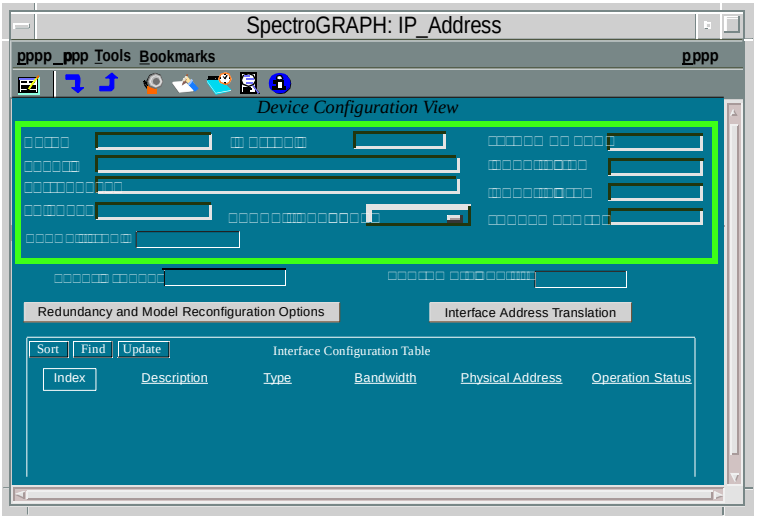
- *Device Configuration View*
- *CSMIM and Annex II Configuration View* (Page 49)
- *MicroAnnex, MicroCS, and CSMIM II Configuration View* (Page 56)

Device Configuration View

Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***Configuration****.*

This view (Figure 11) provides status and configuration information about the device as a whole as well as on a port-by-port basis. It also provides button access to an Interface Address Translation table and a subview that lets you establish redundancy for the model. Fields and column headings within the Device Configuration view and its subviews are explained in detail in the ***SPECTRUM Views*** documentation.

Figure 11: Device Configuration View



CSMIM and Annex II Configuration View

The Configuration View for the CSMIM and Annex II provides the following information and updatable fields for the CSMIM and Annex II:

HW Type
The hardware type on which the terminal server is running.

HW Rev
The hardware revision level on which the terminal server is running.

ROM Rev
The firmware version of the bootstrap ROM installed in the terminal server.

Memory Size
The amount of memory in the terminal server.

Serial Ports
The number of basic character serial ports available. Clicking on the **Detail** button accesses the Serial Port Table described later in this section.

Current Date
The current date and time provided by the time server, displayed in the following format: *Fri., Aug 19 14:51:29 1994*.

Time Zone
This read/write field allows you to define the time zone in which the terminal server resides in minutes west of Greenwich Mean Time (GMT).

Daylight Savings

This button allows you to define the daylight savings time for the geographic location of the terminal server.

Time Broadcast

Setting this button to Enabled, allows the terminal server to broadcast for the time if the preferred load host does not provide a time server.

Boot Host
The Internet Protocol (IP) address of the host from which the terminal server booted.

Image File
The name of the image file from which the terminal server last booted.

Domain
The default domain name provided by the Domain Name Server.Syslog Host

SW Type
The software version variant running in the terminal server.

Major SW Rev
The major software release number.

Minor SW Rev
The minor software release number.

SW Build
Provides a long rectangular window displaying the full name of the software build, including software version, major and minor version numbers, and date and time of the build.

Syslog Host
Provides the Internet Protocol (IP) address of the host configured to log terminal server messages.

Syslog Facility

This button allows you to select the syslog facility used in logging in terminal server messages.

Syslog Mask

Provides a long rectangular window displaying the priority levels of events logged into the terminal server `syslog` file. The default value is **None**.

Boot Parameters

This button accesses the Boot and Network Administration View, described later in this section.

Nameserver Parameters

This button accesses the Nameserver Parameters View, described later in this section.

Security Parameters

This button accesses the Security Parameters View, described later in this section.

LAT Parameters

This button accesses the LAT Parameters View, described later in this section.

VCLI Parameters

This button accesses the VCLI Parameters View, described later in this section.

Serial Port Parameters

This button accesses the Serial Port Table, described later in this chapter.

Boot and Network Administration View

You can access this View by clicking the **Boot Parameters** button in the Configuration View. The Boot and Network Administration View allows you to configure the Boot and Network Administration

Parameters for the device. This view provides the following information:

Internet Addr
The Internet Protocol (IP) address of the terminal server.

Subnet Mask
The Internet subnet mask.

Config File
The name of the host file containing the macro gateway/router rotary definitions for this terminal server.

MOTD File
The host file name containing the message-of-the-day (MOTD) for the terminal server.

Image File
The software file name to request for down-line load of the terminal server.

Dump File
The software file name that received the last terminal server memory dump.

TFTP Directory
Specifies the directory name to be prepared to all files when booting via TFTP.

Server Capability
Defines whether the server can act as a file server host for another server.

Disabled Modules
Defines which selected modules are disabled. Valid arguments are All, None, or one or more of the following names separated by commas: Admin, LAT, PPP, SLIP, SNMP, Nameserver, Edit. The default is None.

Preferred Load Addr
The preferred load address for terminal server.

Preferred Dump Addr
The preferred dump address for terminal server.

Load Dump Gateway
The Internet address of the gateway used when the preferred load or dump host is on a different network or subnet.

Load Broadcast

Setting this button to Enabled allows the terminal server to broadcast for the Config and MOTD files if they are not found on the preferred local host.

Broadcast Addr
The Internet address that the terminal server uses when sending broadcasts.

Load Dump Sequence
Lists the available network interfaces and the order in which the terminal server uses them when doing a down-line load or an up-line dump.

Authoritative Agent

Setting this button to Enabled allows the terminal server to send an ICMP Address Mask Reply to a received CMP Address Mask Request.

Routed

This button allows you to **Enable** or **Disable** the RIP-listener of the terminal server routing daemon.

Control

The Control View allows you to configure the Boot and Network Control Parameters for the CSMIM and Annex II. The View provides the following information:

Boot Mode

This button allows you to configure the boot mode type.

Reset

This button allows you to instruct the terminal server to reset the selected subsystem.

Boot Time
The time at which the next boot is scheduled in HH:MM format.

Image File
The software file name to request for down-line load of the terminal server.

Broadcast Message
The message that is broadcast to the terminal server ports.

Port Broadcast Mode

This button allows you to configure the direction that an administrative broadcast message is sent, given that the port is a slave port.

Port Broadcast Message
Displays the messages sent by users on other ports.

NameServer Parameters View

You can access this View by clicking on the **NameServer Parameters** button in the Configuration View. The NameServer Parameters View allows you to configure the NameServer

Parameters for the device. This view provides the following information:

Nameserver Broadcast

Setting this button to **Enabled** allows the terminal server to broadcast a name server request if the preferred name servers do not respond.

Rwhod

Setting this button to **Enabled** allows the terminal server to listen for RWHO broadcasts when building its host table.

Min Unique Hostnames

This button allows you to **Enable** or **Disable** the terminal server minimum uniqueness feature.

Host Table Size

Defines the number of entries in the terminal server host table. Zero indicates no host table; 251 sets no limit on the size of the table.

Name Server 1

This button allows you to define the name server type on the primary name server host. Choices are: none, ien116, and dns.

Name Server1 Addr

The Internet address of the primary host providing the name service.

Name Server 2

This button allows you to define the name server type on the secondary name server host. Choices are none, ien116, and dns.

Name Server2 Addr

The Internet address of the secondary host providing the name service.

Security Parameters View

You can access this View by clicking on the **Security Parameters** button in the Configuration View. The Security Parameters View allows you to configure the Security Parameters for the devices. The View provides the following information:

Security Subsystem

This button controls whether the host-based security policy is Enabled for access to the subsystem from the server.

Password

Defines the administrative password used by the terminal server when setting up a virtual CLI connection. The default value is <set>.

ACP Key
Defines the encryption key used when exchanging messages between the terminal server and the security server. The default value is <unset>.

Network Turnaround
The amount of time, in seconds, that the terminal server waits for a response from a security server.

Security Broadcast

Setting this button to **Enabled** allows the terminal server to broadcast its security requests when neither of the preferred security servers are available.

Security Server1 Addr
The Internet address of the primary host (ACP server) to which the terminal server sends its security requests.

Security Server2 Addr
The Internet address of the secondary host to which the terminal server sends its security requests.

LAT Parameters View

You can access this View by clicking on the **LAT Parameters** button in the Configuration View. The LAT Parameters View allows you to configure the LAT Parameters for the Xylogics Terminal Server device. The View provides the following information:

Server Name
A string of up to 16 characters used to name the terminal server in the LAT protocol.

Facility Number
The LAT host number.

LAT Location
Specifies the location information for the LAT protocol.

LAT Key
Enables/disables the LAT protocol.

Group Value
Specifies a list of the enabled LAT group codes. The value is displayed as a string of hex characters with each bit defining whether or not a specific group is enabled or disabled.

VCLI Groups
Specifies a list of remote LAT group codes that are accessible to all VCLI users.

Service Limit
Defines the upper boundary on the number of services that the terminal server can maintain.

Retransmit Limit
The number of times to retransmit a packet before notifying the user of a network failure.

LAT Queue Max
Defines the maximum number of LAT host requests that the terminal server saves in its internal queue when the host is not available.

Circuit Timer
The time interval, in tens of milliseconds, between the transmission of LAT packets.

Keep Alive Timer
The time interval, in seconds, between the transmission of identification packets during times of network inactivity.

VCLI Parameters View

You can access this View by clicking on the **VCLI Parameters** button in the Configuration View. The VCLI Parameters View allows you to configure the VCLI Parameters for the Xylogics Terminal Server device. The View provides the following information:

Maximum VCLIs
The maximum number of virtual CLI connections allowed by the terminal server at any one time. A value of zero indicates the terminal server does not allow VCLI connections; a value of 255 indicates the terminal server can maintain an unlimited number of VCLI connections.

VCLI Security

Setting this button to **Enabled** allows the terminal server to validate the user on virtual CLI connections.

VCLI Password
Defines the password used by the terminal server when setting up a virtual CLI connection. The default value is **<unset>**.

CLI Prompt
The string used by the terminal server to prompt all CLI users.

Serial Port Table

You can access this View by clicking on the serial ports **Detail** button in the Configuration View. This table contains entries concerning the Serial Port. Double-click on any entry in the Serial Port Table to access the Serial Port Configuration View. The Serial Port Table's fields are discussed below.

Port ID
An index value that uniquely identifies a port.

Mode
Defines the mode for accessing the serial port. The default is CLI.

CntlLns
The type of hardware control used on the port: modem control (dcddtr), flow control (ctsrts), or both.

IdleTm
Defines whether input or output resets the idle timer for the port.

Port Sec
Controls whether or not the host-based security policy is enabled for access to the port from the port server.

Echo

Controls whether or not the terminal server echoes all characters as they are received from the port.

SLIPMtu
Forces the compressed SLIP interface to use a Maximum Transmission Unit (MTU) of either 1024 bytes (large) or 256 bytes (small). The default is large.

PPPMru
Defines the maximum receive units in bytes. The default value is 1500.

LAT-B
This feature controls interpretation of LAT Data-B packets received from the host.

MicroAnnex, MicroCS, and CSMIM II Configuration View

The Configuration View for the MicroAnnex, MicroCS, and theCSMIM II contain the following fields and buttons for accessing additional Views or tables.

HW Type
The hardware type on which the terminal server is running. The following are object types: err, annex, annex3, microannex, microels, Xylogics Terminal Server device1, ods, Synoptics5390, Xylogics Terminal Server device2, annexs2000, microcs, and annex4000.

HW Rev
The revision level of the hardware platform on which the terminal server is running.

ROM Rev
The revision number of the ROM Monitor Software.

Memory Size
The amount of memory in the terminal server.

Chassis Segment
The current hub backplane segment to which the module is attached. If unknown, a value of 0 is returned.

Serial Ports
The number of basic character serial ports available. Clicking the **Detail** button accesses the Serial Port Table described later in this section.

Lan Interface HW Type
The type of LAN interface hardware in the unit.

MAC Address
The serial number assigned to the unit.

Attachment Changes
The total number of attachment changes for the module since the last cold/warm start for the module. If unknown, a value of 0 is returned.

Memory Size
The amount of memory present in the unit.

EEPROM size
The size of EEPROM present in the unit, reported in kilobytes. EEPROM is used to store configuration parameters and filter definitions for all platforms.

Flash Size
The size of the FLASH memory in the unit. FLASH memory is used to store an operation image in self boot units. If the ROM revision in the unit is less than 0750, the size is used to store an operation image in self boot units.

Chassis Slot ID
The current slot number for the module in the chassis.

Network Parameters

This button access the Network Administration Table, described later in this chapter.

Interface RIP Table

This button describes the Interface RIP Table View, described later in this section.

Boot Parameters

This button accesses the Boot and Network Administration View, described later in this section.

Software Parameters

This button accesses the Software Configuration View, described later in this chapter.

Protocol Parameters

This button accesses the Protocol Administration View, described later in this chapter.

Serial Port Parameters

This button accesses the Serial Port View, described later in this chapter.

Trap Host Parameters

This button accesses the Trap Host View, described later in this chapter.

LAT Parameters

This button accesses the LAT Parameters View, described later in this section.

Security Parameters

This button accesses the Security Parameters View, described later in this section.

Nameserver Parameters

This button accesses the Nameserver Parameters View, described later in this section.

Network Parameters

The Network Administration View allows access to objects pertaining to the setup and configuration of IP and TCP networks.

Interface RIP Configuration View

This View allows access to objects pertaining to the setup and configuration of IP RIP protocol services at the device level. The Interface RIP Configuration View is accessed by double-clicking any column entry in the Interface Routing Table.

Boot and Network Administration View

You can access this View by clicking the **Boot Parameters** button in the Configuration View. The Boot and Network Administration View allows you to configure the Boot and Network Administration Parameters for the MicroCS. The fields for this View are described in the Boot and Network Administration View for Xylogics Terminal Server device, earlier in this chapter.

Protocol Administration

You can access this View by clicking the Protocol Parameters button. Information for the IPX, Apple Talk, RIP, MOP and TMUX fields is described.

Serial Port Table

You can access this View by clicking on the serial ports **Detail** button in the Configuration View. This table contains entries concerning the Serial Port. Double-click on any entry in the Serial Port Table to access the Serial Port Configuration View The Serial Port Table's fields are discussed below.

Port

An index value that uniquely identifies a port.

Mode
Defines the mode for accessing the serial port. The default is CLI.

Control Lines
The type of hardware control used on the port: modem control (dcddtr), flow control (ctsrts), or both.

Idle Time
Defines whether input or output resets the idle timer for the port.

Security
Controls whether or not the host-based security policy is enabled for access to the port from the port server.

Echo
Controls whether or not the terminal server echoes all characters as they are received from the port.

SLIP Mtu
Forces the compressed SLIP interface to use a Maximum Transmission Unit (MTU) of either 1024 bytes (large) or 256 bytes (small). The default is large.

PPP Mru
Defines the maximum receive units in bytes. The default value is 1500.

LAT-B
This feature controls interpretation of LAT Data-B packets received from the host.

Trap Host View

You can access this View by clicking the **Trap Hosts Parameters** button in the Configuration View. Double-click any entry in the Trap Host Table to open the Trap Host Configuration View. The Trap Host View allows you to configure traps for device.

LAT Parameters View

You can access this View by clicking on the **LAT Parameters** button in the Configuration View. The LAT Parameters View allows you to configure the LAT Parameters for the device. The fields for this View are described in the LAT Parameters View, earlier in this chapter.

Security Parameters View

You can access this View by clicking on the **Security Parameters** button in the Xylogics Terminal Server device Configuration View. The Security Parameters View allows you to configure the Security Parameters for the devices. The View fields are described under the Security

Parameters View for the CSMIM and Annex II Configuration View, discussed earlier in this chapter.

NameServer Parameters View

You can access this View by clicking on the **NameServer Parameters** button in the Configuration View. The NameServer Parameters View allows you to configure the NameServer Parameters for the Xylogics Terminal Server device. This View provides the following information:

Nameserver Broadcast

Setting this button to **Enabled** allows the terminal server to broadcast a name server request if the preferred name servers do not respond.

Rwhod

Setting this button to **Enabled** allows the terminal server to listen for RWHO broadcasts when building its host table.

Min Unique Hostnames

This button allows you to **Enable** or **Disable** the terminal server minimum uniqueness feature.

Host Table Size

Defines the number of entries in the terminal server host table. Zero indicates no host table; 251 sets no limit on the size of the table.

Name Server 1

This button allows you to define the name server type on the primary name server host. Choices are none,ien116, and dns.

Name Server1 Addr
The Internet address of the primary host providing the name service.

Name Server 2

This button allows you to define the name server type on the secondary name server host. Choices are none,ien116, and dns.

Name Server2 Addr
The Internet address of the secondary host providing the name service.

Diagnostic View

The Diagnostic View provides information on the Xylogics Terminal Server device's status over a period of time.

You can access the Diagnostic View by double-clicking on the Diagnostic View label or selecting **Diagnostic** from the Icon SubViews menu.

Diagnostic View Information

The attributes displayed are pre-selected and use colors to represent the following statistics:

Cntx Switches

The total number of context switches since last booting the Xylogics Terminal Server device.

Activations

The number of processes that have been activated since last booting the Xylogics Terminal Server device.

Reschedules

The total number of processes that have timed out since last booting the Xylogics Terminal Server device.

CPU Util

The percent of CPU time currently in use.

Details

This button accesses the Diagnostic Detail View, providing detailed breakdowns of the device diagnostic statistics. The Diagnostic Detail View is described later in this section.

This View also contains a Multi-Attribute Line Graph which provide buttons that access other Views, and a general indication of server activity. For more information on the Multi-Attribute Line Graph and its buttons, refer to ***SPECTRUM Views***.

Diagnostic Detail View

This View displays detailed breakdowns of the device diagnostic statistics.

Accessing the Diagnostic Detail View

You can access this View by clicking on the **Details** button in the Diagnostic View.

Diagnostic Detail View Information

The Diagnostic Detail View provides the following information:

% CPU Util

The percentage of the device's total CPU power currently utilized.

Max Processes

The total number of process structures allocated for use.

Active Processes

The number of currently active processes.

Most Processes
The maximum number of active processes since booting the Xylogics Terminal Server device.

Total CPU Activates
The number of processes that have been activated since last booting the Xylogics Terminal Server device.

Total Context Switches
The total number of context switches since last booting the Xylogics Terminal Server device.

Total CPU Reschedules
The total number of processes that have timed out since last booting the Xylogics Terminal Server device.

Usable Memory
The amount of memory available for data buffers and other structures.

Free Memory
The amount of currently available memory.

Min Free Memory
The minimum amount of free memory since booting the Xylogics Terminal Server device.

Max Callouts
The number of allocated Callout structures for timed events in the Xylogics Terminal Server device.

Free Callouts
The current number of free Callout structures.

Least Callouts
The least number of Callouts that were available since last booting the Xylogics Terminal Server device.

Total Mbufs
The total number of mbufs allocated by the Annex kernel.

Free Mbufs
The number of currently available mbufs.

Min Mbufs
The least number of mbufs available at any time since the last reboot of the Annex.

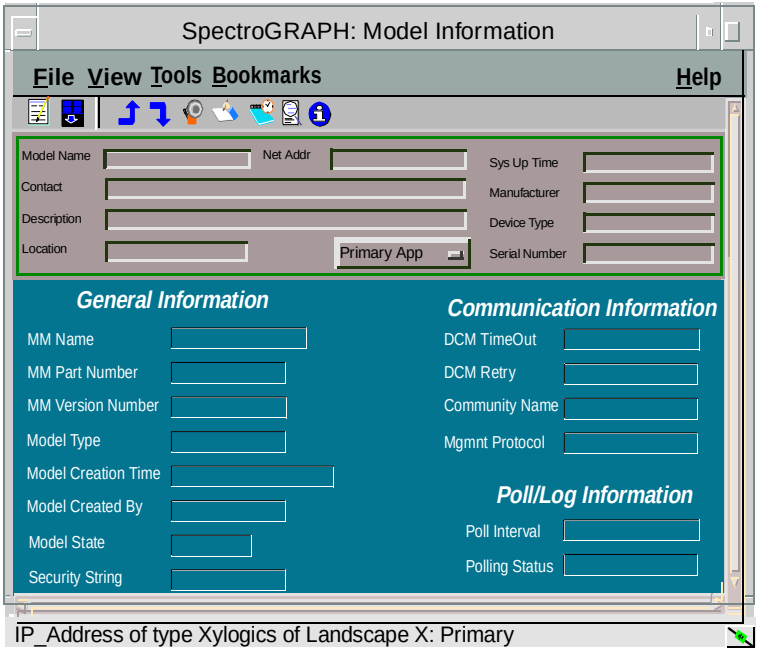
Denied Mbufs
The number of times a process requested an mbuf and was denied since there were none available.

Model Information Views

This section provides a brief description of the Model Information views available for models of Xylogics Terminal Server devices in SPECTRUM.

Model Information views provide descriptive and configuration information about SPECTRUM models of individual devices, interfaces, and applications. Figure 12 shows an example of the Model Information view accessed from the **Icon Subviews** menu for the Xylogics model's Device icon. Model Information views are also available for each of the Interface icons in the Interface Device and Interface Device Topology views, and for each of the Application icons in the Application view. Although these views may vary slightly depending on the particular entity being modeled, their basic layout and content are similar for most SPECTRUM management modules. Therefore these views are described in more detail in the ***SPECTRUM Views*** documentation.

Figure 12: Model Information View



Index

A

Address Translation table 34
Administrative Status 34
Application
  Common
    Bridging
      (GenBridgingApp) 38
    Ethernet (EthernetApp) 38
    MIB-II (SNMP2_Agent) 38
    Routing (GenRtrApp) 38
  Device-specific 38
  Icons 36
Authoritative Agent 52

B

Boot Parameters 50

C

Chassis Device View 11
Colors
  Interface Status Label 12
Condition Status Label 37
Configuration views 48
Control 52

D

Daylight Savings 49
Device Configuration View 48
Device icon 8, 11, 36
Device Performance View 46
Devices supported by this module 7
Domain 49
  Name Server 49

E

Ethernet Interface Configuration
    View 14, 15
Ethernet Logical Interface
    Number 14
Ethernet Logical Interface Status 14

I

Icon mode 36
Icon Subviews Menus
  for Interface icon 13
Icons
  Device 8, 36
  Interface 12, 35
Interface Device Topology View 35
Interface icon 12
Interface Icon Subviews Menu
    Options 13
Interface Status View 33
  Administrative Status 34
  Operational Status 33

L

label a 14
label b 14
label c 14
label d 15
Labels
  Application Icon
    Condition Status 37
    Model Name 37
    Model Type 37
  Interface
    IF Status Label 12
    Interface Number Label 12
    Interface Type Label 12
    Physical Address Label 13

Index

LAT Parameters 50, 58
List mode 36
Load Broadcast 51

M

Min Unique Hostnames 53, 60
Mode (Icon or List) 36
Model
  Information
    View 62
Model Information views 63
Model type 8
Model Type Label 37
MotMPRouter 8

N

Name
  Server 1 53, 60
  Server 2 53, 60
Nameserver
  Broadcast 53, 60
Nameserver Parameters 50, 58
Network I/O ports 35

O

Operational Status 33

P

Performance View 47
Performance views 46

R

Required Reading 6
Restricted Rights Notice 3
Routed 52
Rwhod 53, 60

S

Secondary Address Panel 34
Security
  Broadcast 54
  Subsystem 53
Security Parameters 50, 58
Serial ports 35
Syslog Facility 50

T

Time Broadcast 49
Topology view 8
Trademarks 3

V

VCLI Parameters 50
Views
  Application 36
  Configuration 48
  Device Configuration 48
  Device Performance 46
  Interface Device 11
  Interface Status 33
  Model Information 63
  Performance 46
  Topology 8

Index